

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
17 March 2005 (17.03.2005)

PCT

(10) International Publication Number  
**WO 2005/023309 A3**

(51) International Patent Classification<sup>7</sup>: **A61K 47/48**

(21) International Application Number:  
PCT/GB2004/003904

(22) International Filing Date:  
13 September 2004 (13.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0321344.4 11 September 2003 (11.09.2003) GB

(71) Applicant (for all designated States except US): **HEALTH PROTECTION AGENCY** [GB/GB]; Porton Down, Salisbury, Wiltshire SP4 0JG (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **FOSTER, Keith** [GB/GB]; Health Protection Agency, Porton Down, Salisbury, Wiltshire SP4 0JG (GB). **CHADDOCK, John** [GB/GB]; Health Protection Agency, Porton Down, Salisbury, Wiltshire SP4 0JG (GB). **PENN, Charles** [GB/GB]; Health Protection Agency, Porton Down, Salisbury, Wiltshire SP4 0JG (GB).

(74) Agents: **MACLEAN, Martin, Robert** et al.; Mathys & Squire, 120 Holborn, London EC1N 2SQ (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:  
15 September 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DESIGN OF RE-TARGETED TOXIN CONJUGATES

(57) Abstract: The present invention provides a method for designing a re-targeted toxin conjugate for use in treating a medical condition or disease. Also provided, is the use of said conjugates in the manufacture of a medicament for treating medical conditions or diseases. The conjugates include a Targeting Moiety, which directs the conjugate to a desired target cell, and are characterised by a Targeting Moiety that increases exocytic fusion in the target cell. The present invention also provides methods for identifying agonists suitable for use as Targeting Moieties, and methods for preparing conjugates comprising said Targeting Moieties, to re-target a toxin to a cell of therapeutic interest. In particular, the present invention describes a method for designing a toxin conjugate, and describes therapeutic applications of said conjugates to inhibit or reduce cellular processes. Even more particularly, the present invention describes a method for designing toxin conjugates based upon non-cytotoxic toxins able to inhibit exocytosis, such as clostridial neurotoxins, and describes therapeutic applications of said conjugates to inhibit or reduce exocytosis (for example secretion, or the delivery of proteins such as receptors, transporters, and membrane channels to the plasma membrane of a cell).

WO 2005/023309 A3